

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
26 February 2004 (26.02.2004)

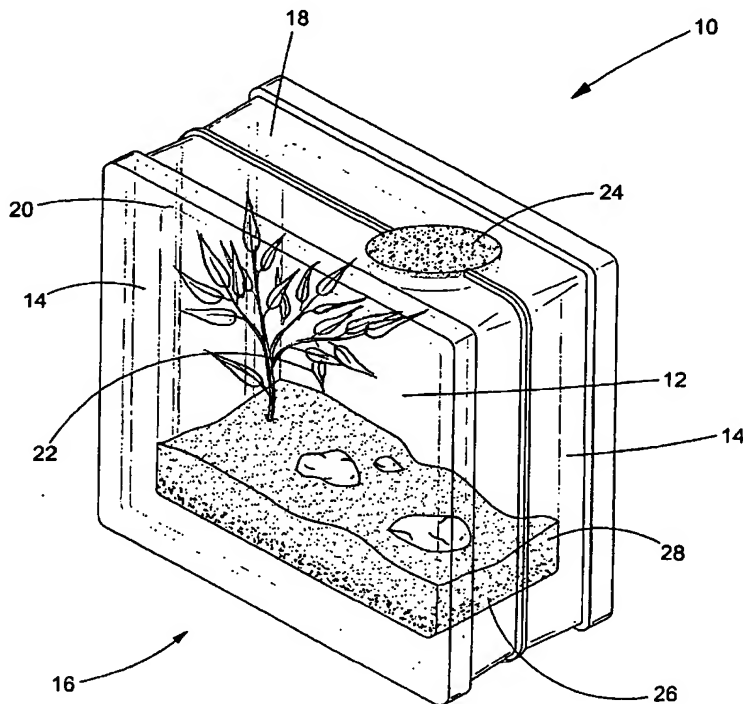
PCT

(10) International Publication Number
WO 2004/016080 A1

- (51) International Patent Classification⁷: **A01K 63/00** (74) Agent: GALGUT, John; 23A Seventh Avenue, Parktown North, 2195 Johannesburg (ZA).
- (21) International Application Number: PCT/ZA2003/000114 (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date: 15 August 2003 (15.08.2003) (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 02/6578 16 August 2002 (16.08.2002) ZA
- (71) Applicant (*for all designated States except US*): SQUARE FOREST SOUTH AFRICA (PTY) LIMITED [ZA/ZA]; N° 96 2nd Avenue, Unit 61, Kew, 2090 Johannesburg (ZA).
- (72) Inventor; and
- (75) Inventor/Applicant (*for US only*): SULSKI, Warren, Paul [ZA/ZA]; 306 Limorè, 2198- 8 St Peter's Road (ZA).

[Continued on next page]

(54) Title: AQUARIUM



(57) Abstract: The invention concerns an at least partially transparent container for use as an aquarium, herbarium, terrarium, vivarium or the like. The container is characterized therein that it constitutes a building unit that is adapted for engaging complementarily shaped containers so as to form a display arrangement. The container includes a substantially continuous interior surface defining a chamber for housing fish and/or plants and/or animal or insect matter and/or decorative or ornamental matter; radiused corner zones between interior surfaces of neighboring walls of the container; and at least one sealable aperture extending through a wall of the container for permitting access to the fish and/or plants and/or animal or insect matter and/or decorative or ornamental matter within the container. The invention extends to an aquarium, herbarium, terrarium or vivarium arranged within a transparent and hollow glass brick, as well as to a method of manufacturing a terrarium.



Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

CONTAINER**TECHNICAL FIELD**

The invention relates to a container. More particularly, the invention relates to a container for use as a housing for an aquarium, herbarium, terrarium, vivarium or the like. The invention also extends to a terrarium arranged within the container and to a method of producing such a terrarium. The invention further extends to furniture incorporating one or more of such containers therein.

BACKGROUND ART

There are various aquariums, herbariums, terrariums and vivariums known and available in the market place. One of the disadvantages of known systems and ecosystems of this nature is the presence of unwanted bacteria and moulds within the housing and the lack of effective control of contaminants, such as spores, bacteria, fungi, plant rust and insects in the production environment, raw and production materials, and finished product.

Another disadvantage is the lack of physical cooperativeness between different such systems and the relatively limited variations that are available.

OBJECT OF THE INVENTION

It is one object of the invention to provide a container for use as a housing for an aquarium, herbarium, terrarium, vivarium or the like that will overcome or at least minimize some of the disadvantages associated with known containers of this kind.

It is a further object of the invention to provide a terrarium arranged within the container, as well as a method of producing such a terrarium.

It is yet a further object of the invention to provide furniture incorporating the container.

DISCLOSURE OF THE INVENTION

5 According to the invention there is provided an at least partially transparent container for use as an aquarium, herbarium, terrarium, vivarium or the like, the container being characterized therein that it constitutes a building unit which is adapted for engaging complimentarily shaped containers so as to form a display arrangement; the container further being characterised therein that it includes a substantially continuous interior
10 surface defining a chamber for housing fish and/or plants and/or animal or insect matter and/or decorative or ornamental matter; radiused corner zones between interior surfaces of neighboring walls of the container; and at least one sealable aperture extending through a wall of the container for permitting access to the fish and/or plants and/or animal or insect matter and/or decorative or ornamental matter within the
15 container.

The applicant believes that by providing radiused corner zones, which in effect define a substantially continuous interior surface within the container, it limits growth potential of contaminants, which often nest in crevices and joints within a container.

20 The container may be a substantially square or rectangular container comprising two substantially parallel sidewalls, two opposing substantially parallel end walls, and two parallel walls defining a floor and roof wall respectively of the container. In one form of the invention, the container may be a hollow, transparent glass brick dimensioned to
25 engage similar glass bricks so as to form a display arrangement, such as a glass wall.

The container may include a tight-fitting plug for sealing the aperture, which may typically extend through the roof of the container. The plug may be manufactured from any one of cork, wood, rubber or glass.

- 5 According to another aspect of the invention there is provided an aquarium, herbarium, terrarium or vivarium comprising fish and/or plants and/or animal or insect matter and/or decorative or ornamental matter, the aquarium, herbarium, terrarium or vivarium being characterized therein that it is arranged within a hollow at least partially transparent container which is characterised therein that it includes a substantially continuous
- 10 interior surface and radiused corner zones between interior surfaces of neighboring walls of the container; and at least one aperture extending through a wall of the container for permitting access to the animal and/or plant and/or insect matter and/or fish and/or decorative, ornamental or the like matter within the container.
- 15 According to another aspect of the invention there is provided a temporarily self-sustaining terrarium characterized therein that it is arranged within a hollow glass brick which includes a substantially continuous interior surface and radiused corner zones between interior surfaces of neighboring walls of the brick; and at least one aperture extending through a wall of the glass brick for permitting access to contents within the
- 20 brick; the terrarium further being characterised therein that it includes a first drainage layer comprising a mixture of approximately 50% charcoal and 50% river sand.

The terrarium may include a second layer for supporting plant material therein, the second layer comprising either a mixture of approximately 55% potting soil and 45%

25 river sand for desert-type plants, or a mixture of approximately 80% potting soil and 20% peatmoss for forest-type plants.

According to another aspect of the invention there is provided a method of producing a temporarily self-sustaining terrarium that it is arranged within an at least partially transparent container, the method comprising the steps of introducing a first drainage
5 soil layer comprising a mixture of approximately 50% charcoal and 50% river sand into the container and leveling the drainage layer; introducing a second soil layer comprising either a mixture of approximately 55% potting soil and 45% river sand for desert-type plants, or a mixture of approximately 80% potting soil and 20% peatmoss for forest-type plants into the container and leveling the soil layer; sterilizing the soil mixtures by
10 subjecting the container to microwave treatment so as to remove potentially unwanted bacteria; sealing the container and allowing the same to cool for at least 4 hours; introducing plant material into the container and sealing the container so as to create an ecosystem within which the plant material can grow in the absence of added oxygen or water.

15
According to a further aspect of the invention there is provided a display arrangement comprising a series of containers, wherein each container includes fish and/or plants and/or animal or insect matter and/or decorative or ornamental matter, and wherein each container includes a substantially continuous interior surface and radiused corner
20 zones between interior surfaces of neighboring walls of the container; and at least one aperture extending through a wall of the container for permitting access to contents within the container.

The containers may be stacked upon one another or may otherwise be connected to
25 one another.

According to yet a further aspect of the invention there is provided a wall structure comprising a series of containers, wherein each container includes fish and/or plants and/or animal or insect matter and/or decorative or ornamental matter, and wherein each container includes a substantially continuous interior surface and radiused corner zones between interior surfaces of neighboring walls of the container; and at least one aperture extending through a wall of the container for permitting access to contents within the container.

More particularly, the wall structure may be a glass wall comprising a series of hollow glass bricks wherein each brick includes fish and/or plants and/or animal or insect matter and/or decorative or ornamental matter.

According to yet another aspect of the invention there is provided furniture incorporating therein one or more of an aquarium, herbarium, terrarium or vivarium comprising fish and/or plants and/or animal or insect matter and/or decorative or ornamental matter wherein the aquarium, herbarium, terrarium or vivarium is arranged within a hollow glass brick.

SPECIFIC EMBODIMENT OF THE INVENTION

Without limiting the scope thereof, a few embodiments of the invention will now be described by way of example only and with reference to the accompanying drawings wherein –

Figure 1 is a perspective view of a container according to the invention where the container is used as a housing for a terrarium;

Figure 2 is a perspective view of a glass wall comprising of a series of containers according to Figure 1;

Figure 3 is a container according to Figure 1, encased within a frame for displaying the container in use;

5 Figure 4 is an ornamental arrangement adapted to be mounted on a wall or the like planar surface and including a container according to the invention; and

Figure 5 is a perspective view of a CD stand incorporating two containers according to the invention.

10 A container according to the invention is generally designated by reference numeral 10. The container 10, which is used as an aquarium, herbarium, terrarium, vivarium or the like, is characterized therein that it constitutes a building unit which is suitably dimensioned for engaging complementarily shaped containers 10 to form a display arrangement.

15

The container 10 comprises at least two substantially parallel walls. Particularly, the container 10 is a substantially square or rectangular container 10 comprising two substantially parallel sidewalls 12, two opposing substantially parallel end walls 14, and two parallel walls defining a floor 16 and roof wall 18 respectively of the container 10.

20

The container 10 includes a substantially continuous interior wall surface. Particularly, the container 10 includes radiused corner zones 20 defined between the walls of the container 10, and more particularly between neighboring interior wall surfaces. The applicant believes that the absence of sealing material, such as silicon, between
25 adjacent walls reduces the risk of unwanted moulds and bacteria forming within the container.

The container 10 is preferably a wholly transparent container 10. In the illustrated embodiment of the invention, the container 10 is a glass brick dimensioned to engage similar glass bricks so as to form a display arrangement, such as a glass wall 19 (see Figure 2). It will be appreciated that the container 10 alternatively may house and display fish and/or animal or insect matter and/or decorative or ornamental matter, such as multi-colored cobble stones, layers of different colored sands, glass beads, or the like.

The container 10 also includes at least one aperture extending through a wall of the container 10 for permitting access to contents 22 within the container 10. For this purpose the container 10 includes a tight-fitting plug 24, for example of cork, wood, rubber or glass, for sealing the aperture.

In those cases where the container is used as a housing for a terrarium, the container includes a first drainage soil layer 26 comprising a mixture of approximately 50% charcoal and 50% river sand into the container and leveling the drainage layer. The container also includes a second soil layer 28 comprising either a mixture of approximately 55% potting soil and 45% river sand for desert-type plants, or a mixture of approximately 80% potting soil and 20% peatmoss for forest-type plants into the container and leveling the soil layer. The terrarium may be primarily self-sustaining in that it does not require water, nutrients or other additions for a period of approximately 18 months.

Figure 3 illustrates a container 10 encased within a wooden frame 30 for displaying the container on a desk, within a windowsill or the like.

In Figure 4 the container 10 is located in an ornamental wall arrangement 32, including two platforms 34 for receiving candles thereon.

- 5 Figure 5 is yet a further example of furniture incorporating the container 10 of the invention. In this embodiment, the container 10 is incorporated in a CD stand.

In preparing a terrarium according to the invention, the applicant first mixes 55% potting soil with 45% river sand (i.e. for desert-type plants), or 80% potting soil and 20%
10 peatmoss (for forest-type plants). The soil mixture is tested so that it has a pH of between 5.6 and 6.5 and left to dry. The soil mixture is occasionally stirred during the drying process and treated with fungicide. While the mixture is drying, a drainage layer is prepared in the container by placing approximately 100mL of a mixture of approximately 50% river sand and 50% charcoal in the bottom of the container. The
15 drainage layer is leveled out with a dry paintbrush. Subsequently, approximately 500mL of the soil mixture of potting soil and river sand, or potting soil and peatmoss, as the case may be, is placed in the container atop the drainage layer and leveled out with a dry paintbrush. The container with the drainage and soil mixtures are placed in a microwave oven and treated for between 1 and 2 minutes, and ideally for 1 minute and
20 40 seconds. The plug is placed in the aperture to seal the container and the container is allowed to cool down for at least 4 hours.

After cooling, a plant is planted in the soil layer. In the case of desert-type plants, the roots of the plants are neither trimmed nor washed before planting the plant. In the
25 case of forest-type plants, however, the plant roots can be trimmed slightly, although

washing of the same should be avoided. The plant roots are treated with 2.5mℓ of fungicide, 5mℓ of Nitrosol and 2 grams of Verikop before the plant is planted. After the plant is inserted into the container, the container is sealed with the plug.

- 5 It will be appreciated that many other embodiments of the invention may be possible without departing from the spirit or scope of the invention as defined in the claims.

CLAIMS

1. An at least partially transparent container [10] for use as an aquarium, herbarium, terrarium, vivarium or the like, the container [10] being characterized therein that it constitutes a building unit which is adapted for engaging complementarily shaped containers [10] so as to form a display arrangement; the container [10] further being characterised therein that it includes a substantially continuous interior surface defining a chamber for housing fish and/or plants and/or animal or insect matter and/or decorative or ornamental matter; radiused corner zones [20] between interior surfaces of neighboring walls of the container [10]; and at least one sealable aperture extending through a wall of the container [10] for permitting access to the fish and/or plants and/or animal or insect matter and/or decorative or ornamental matter within the container [10] .
2. The container [10] according to claim 1 characterised therein that the container [10] is a substantially square or rectangular container [10] comprising two substantially parallel sidewalls [12], two opposing substantially parallel end walls [14], and two parallel walls defining a floor [16] and roof wall [18] respectively of the container [10].
3. The container [10] according to claim 1 characterised therein that the container [10] is a hollow, transparent glass brick dimensioned to engage similar glass bricks so as to form a display arrangement, such as a glass wall [19].

4. The container [10] according to claim 1 characterised therein that the container [10] includes a tight-fitting plug [24] for sealing the aperture, the plug [24] being manufactured from any one of cork, wood, rubber, glass or the like.

5

5. An aquarium, herbarium, terrarium or vivarium comprising fish and/or plants and/or animal or insect matter and/or decorative or ornamental matter, the aquarium, herbarium, terrarium or vivarium being characterized therein that it is arranged within a hollow at least partially transparent container [10] which is characterised therein that it includes a substantially continuous interior surface and radiused corner zones [20] between interior surfaces of neighboring walls of the container [10]; and at least one aperture extending through a wall of the container for permitting access to the animal and/or plant and/or insect matter and/or fish and/or decorative, ornamental or the like matter within the container [10].

10

15

6. A temporarily self-sustaining terrarium characterized therein that it is arranged within a hollow glass brick [10] which includes a substantially continuous interior surface and radiused corner zones [20] between interior surfaces of neighboring walls of the brick; and at least one aperture extending through a wall of the glass brick [10] or permitting access to contents within the brick; the terrarium further being characterised therein that it includes a first drainage layer comprising a mixture of approximately 50% charcoal and 50% river sand [26].

20

25

7. The terrarium according to claim 6 characterised therein that it includes a second layer [28] for supporting plant material therein, the second layer comprising either a mixture of approximately 55% potting soil and 45% river sand for desert-type plants, or a mixture of approximately 80% potting soil and 20% peetmoss for forest-type plants.

8. A method of producing a temporarily self-sustaining terrarium that is arranged within an at least partially transparent container [10], the method comprising the steps of introducing a first drainage soil layer [26] comprising a mixture of approximately 50% charcoal and 50% river sand into the container [10] and leveling the drainage layer; introducing a second soil layer [28] comprising either a mixture of approximately 55% potting soil and 45% river sand for desert-type plants, or a mixture of approximately 80% potting soil and 20% peetmoss for forest-type plants into the container [10] and leveling the soil layer; sterilizing the soil mixtures by subjecting the container [10] to microwave treatment so as to remove potentially unwanted bacteria; sealing the container [10] and allowing the same to cool; introducing plant material into the container [10] and sealing the container [10] so as to create an ecosystem within which the plant material can grow in the absence of added oxygen or water.

9. A display arrangement comprising a series of containers [10], wherein each container [10] includes fish and/or plants and/or animal or insect matter and/or decorative or ornamental matter, and wherein each container [10] includes a substantially continuous interior surface and radiused corner zones [20] between interior surfaces of neighboring walls of the container [10]; and

at least one aperture extending through a wall of the container [10] for permitting access to contents within the container [10] .

10. A wall structure [19] comprising a series of containers [10], wherein each
5 container [10] includes fish and/or plants and/or animal or insect matter
and/or decorative or ornamental matter, and wherein each container [10]
includes a substantially continuous interior surface and radiused corner zones
between interior surfaces of neighboring walls of the container [10]; and at
least one aperture extending through a wall of the container [10] for permitting
10 access to contents within the container [10].

11. The wall structure [19] according to claim 10 characterised therein that the
wall structure is a glass wall comprising a series of hollow glass bricks [10]
wherein each brick includes fish and/or plants and/or animal or insect matter
and/or decorative or ornamental matter.
15

12. Furniture incorporating therein one or more of an aquarium, herbarium,
terrarium or vivarium comprising fish and/or plants and/or animal or insect
matter and/or decorative or ornamental matter wherein the aquarium,
herbarium, terrarium or vivarium is arranged within a hollow glass brick [10].
20

13. A container [10] substantially as herein illustrated and exemplified with
reference to the accompanying drawings.

14. An aquarium, herbarium, terrarium or vivarium substantially as herein
illustrated and exemplified with reference to the accompanying drawings.
25

15. A method of producing a temporarily self-sustaining terrarium that is arranged within an at least partially transparent container [10] substantially as herein illustrated and exemplified with reference to the accompanying drawings.

5

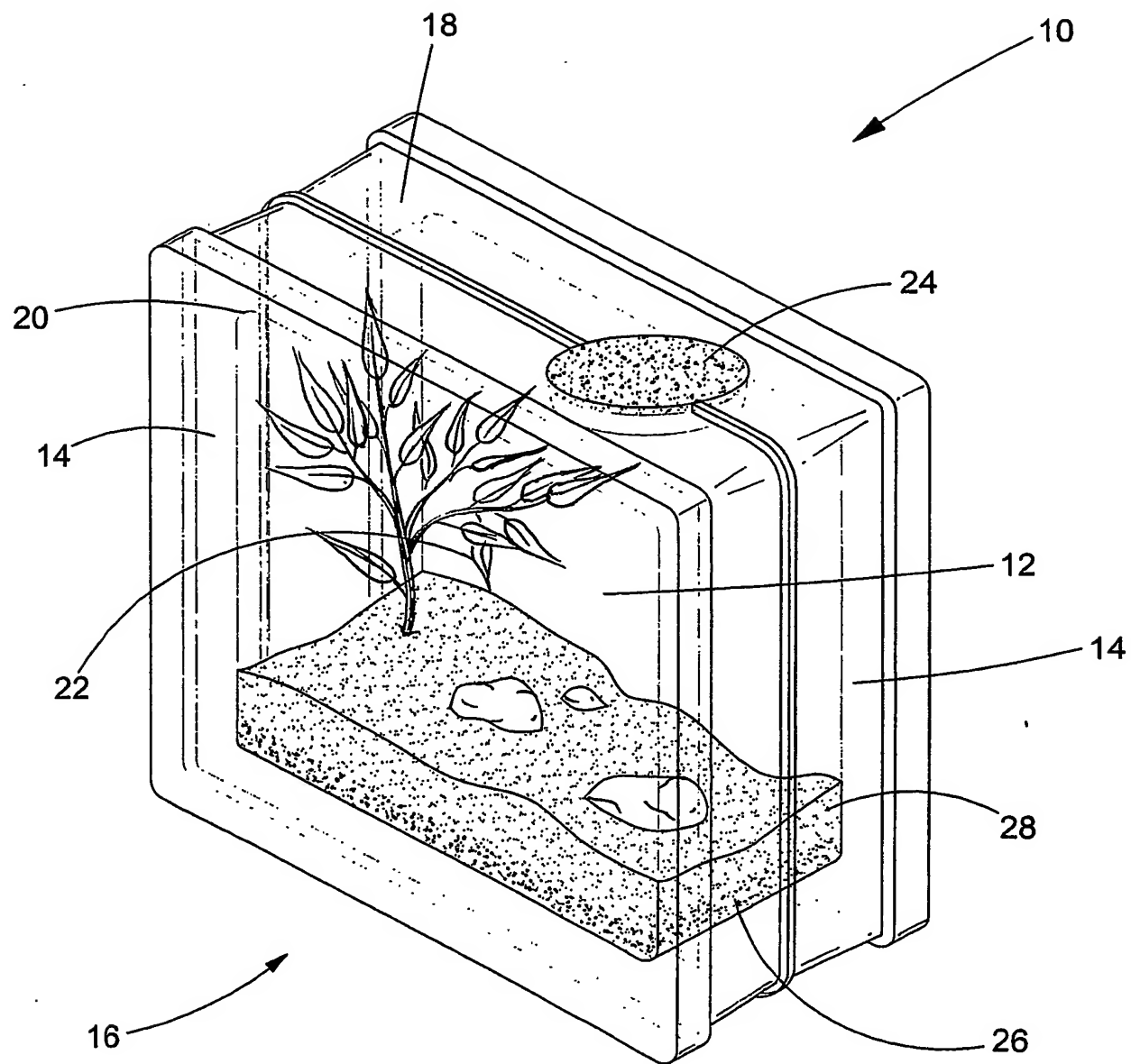
16. A display arrangement comprising a series of containers [10] substantially as herein illustrated and exemplified with reference to the accompanying drawings.

10

17. A wall structure substantially as herein illustrated and exemplified with reference to the accompanying drawings.

15

18. Furniture incorporating therein one or more of an aquarium, herbarium, terrarium or vivarium substantially as herein illustrated and exemplified with reference to the accompanying drawings.

FIGURE 1

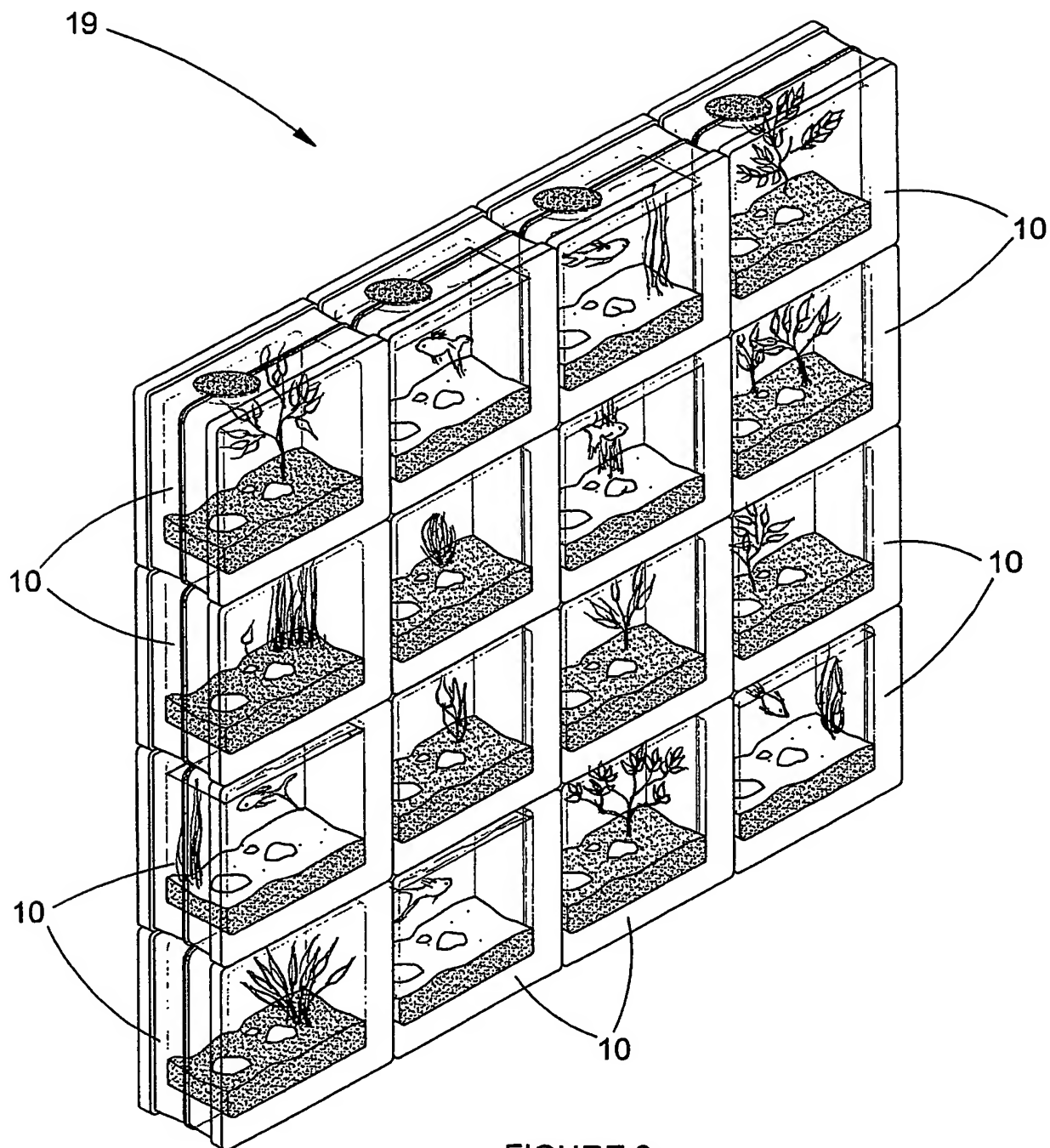


FIGURE 2

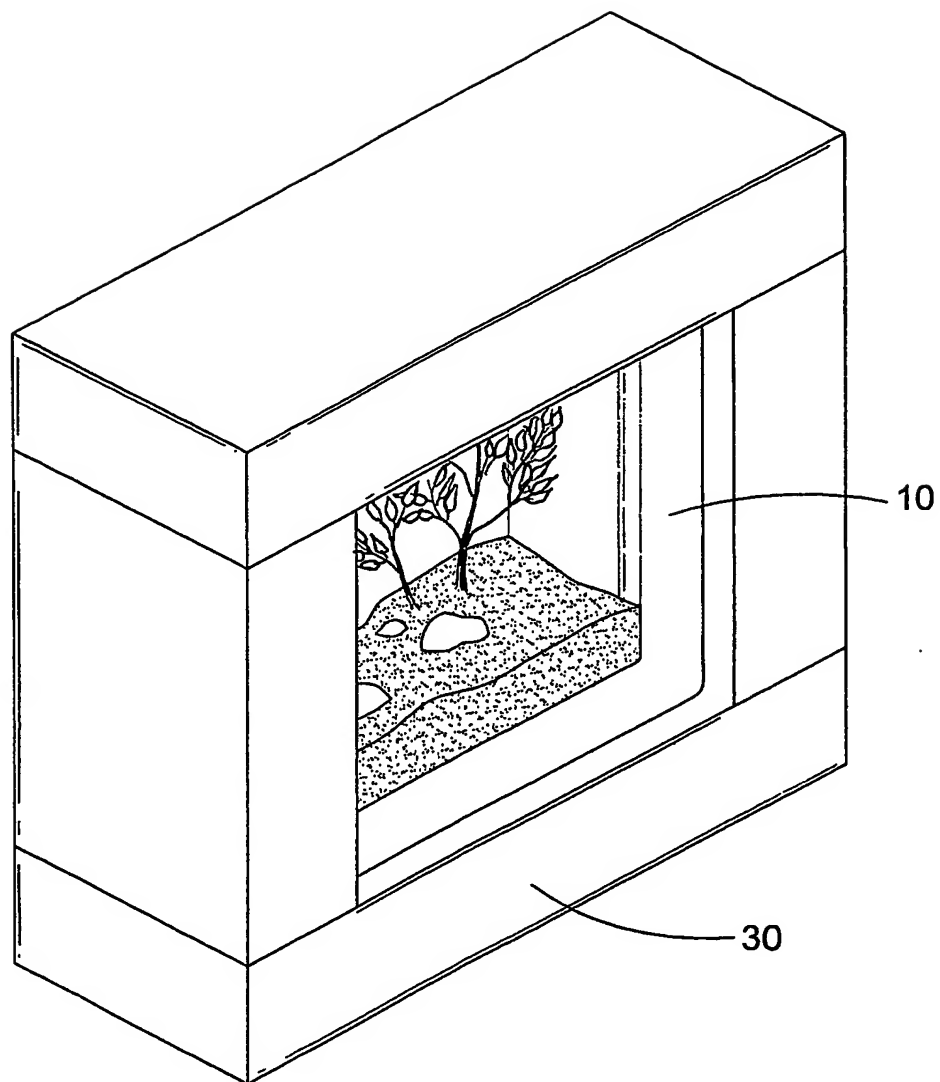


FIGURE 3

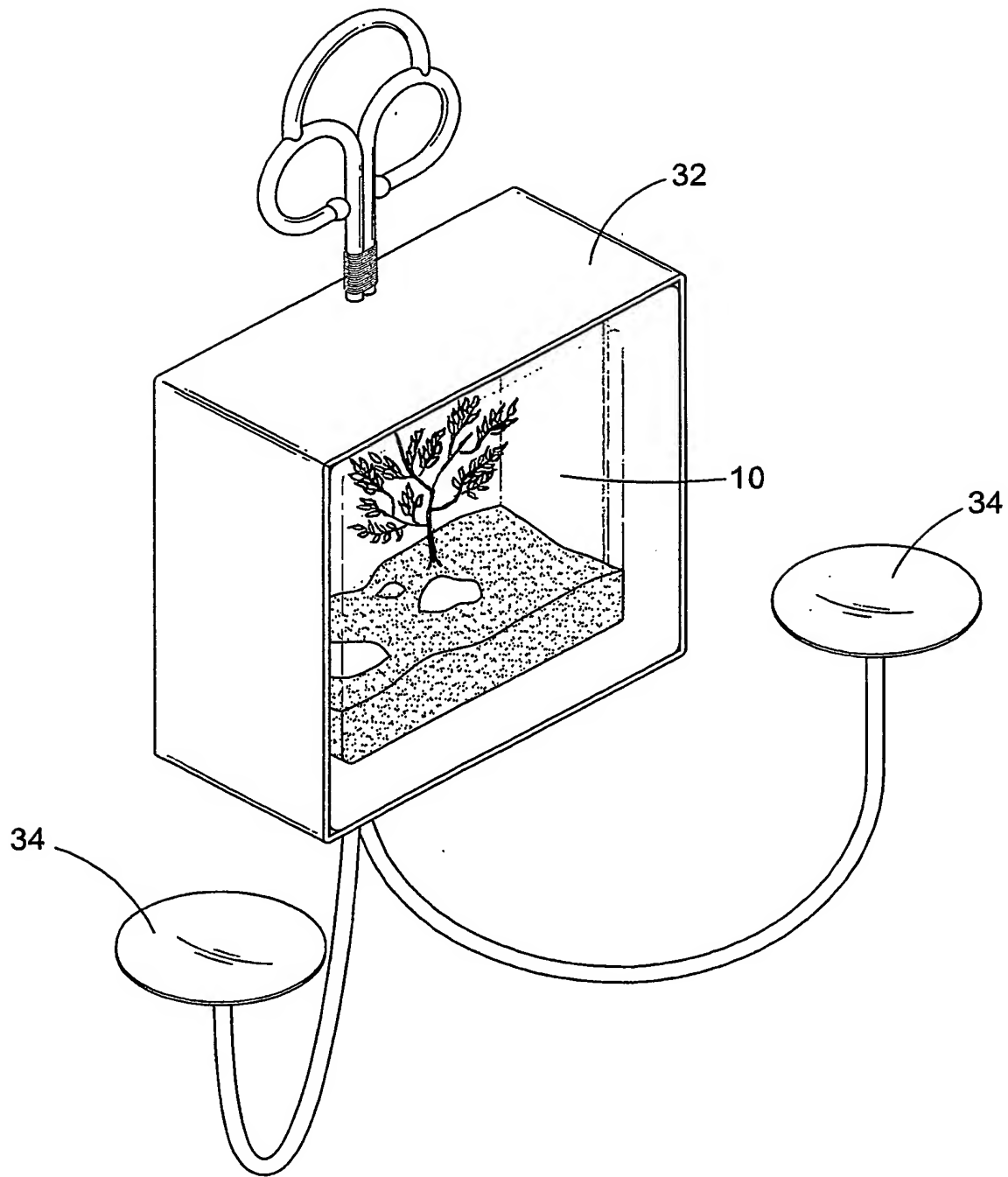


FIGURE 4

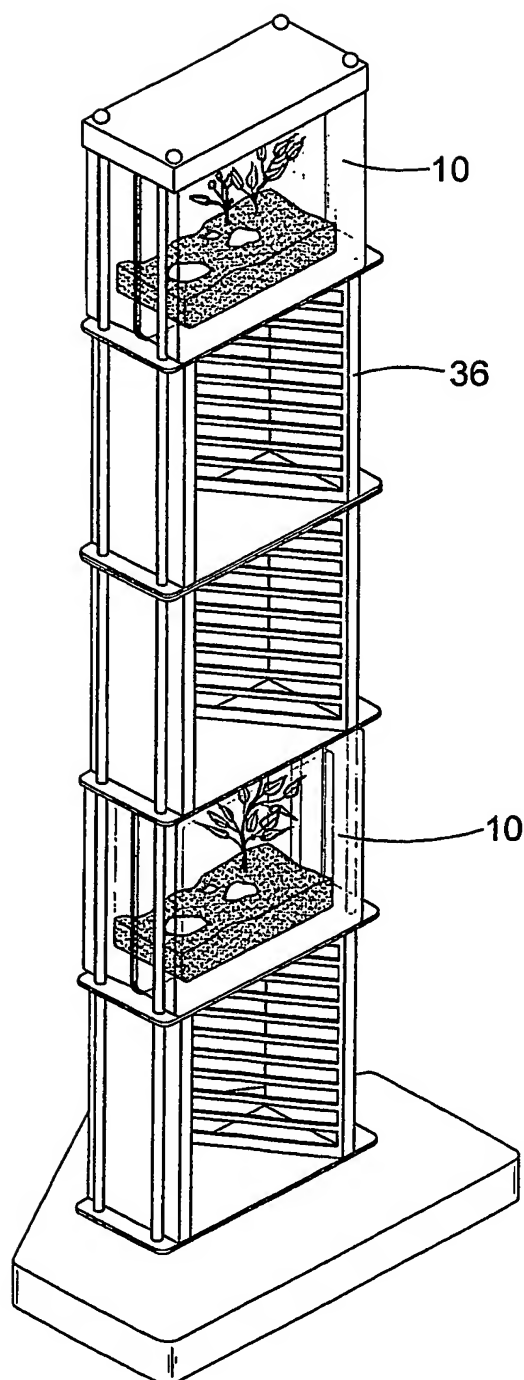


FIGURE 5

INTERNATIONAL SEARCH REPORT

Intern. Application No
PCT/ZA 03/00114A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A01K63/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A01K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 551 378 A (DEWALT CRAIG A) 3 September 1996 (1996-09-03) abstract claims 1-5 figures 1,3-8	1-3,5,6, 9-12
X	US 4 191 129 A (RENNY ARTHUR B) 4 March 1980 (1980-03-04) abstract column 1, line 25 - line 53 claim 1 figures 1-7	1,5,6
X	US 4 126 102 A (GALLOWAY JAMES V) 21 November 1978 (1978-11-21) column 3, line 13 - line 24 figures 1,2	1,5,6
	--- -/-	

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the International filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the International filing date but later than the priority date claimed

- *T* later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the International search

19 January 2004

Date of mailing of the International search report

27/01/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Van Woensel, G

INTERNATIONAL SEARCH REPORT

International Application No

PCT/ZA 03/00114

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 099 376 A (THOREN CAGING SYSTEMS INC) 16 May 2001 (2001-05-16) abstract figures 2,4 -----	10

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/ZA 03/00114

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5551378	A	03-09-1996	US 5413070 A	09-05-1995
US 4191129	A	04-03-1980	US 4380968 A	26-04-1983
US 4126102	A	21-11-1978	NONE	
EP 1099376	A	16-05-2001	US 6305324 B1	23-10-2001
			CA 2325245 A1	05-05-2001
			EP 1099376 A2	16-05-2001
			US 2002066414 A1	06-06-2002

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☒ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.